CLAIMS

What is claimed is:

Sub a1

1. A method for purchasing items over a network using a secure communication device, the secure communication device including a host processor, a secure memory that includes a laser-scribed encryption key, and a non-secure memory for storing encrypted data, wherein sensitive data is encrypted within the secure memory using the laser-scribed encryption key and stored as encrypted data in the non-secure memory, the method comprising the steps of:

retrieving an encrypted credit card number and an encrypted secret key from the non-secure memory;

decrypting the encrypted credit card and secret key with the laser-scribed encryption key;

encrypting the credit card number with a communication encryption key, the communication encryption key being related to the secret key; and

and transferring the credit card number, as encrypted with the communication encryption key, over the network to a destination.

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2. The method as claimed in claim 1 wherein the encrypted data is decrypted within the secure memory using the laser-scribed encryption key and stored within the secure memory for use by the host processor.

3. The method as claimed in claim 1 further comprising the steps of:

receiving a personal identification number (PIN) from a user;

decrypting an encrypted PIN with the laser-scribed encryption key;

wherein the step of transferring the encrypted credit card number step is performed when the decrypted PIN and the PIN received from the user compare.

4. The method as claimed in claim 1 further comprising the steps of:

receiving biometric information from a user;

decrypting stored biometric information for the user with the laser-scribed encryption key;

wherein the step of transferring the encrypted credit card number step is performed when the decrypted biometric information compares with the biometric information received from the user.

5. The method as claimed in claim 1 wherein the communication encryption key is a common session key and wherein the method further comprises the step of generating the session key using the secret key and information provided by the destination.

6. The method as claimed in claim 1 wherein the host processor and secure memory are fabricated on an integrated circuit chip, and the encrypted data is stored in a non-volatile memory.

7. The method as claimed in claim 1 wherein the laser-scribed encryption key is generated by laser-scribing a semiconductor die during fabrication of the secure memory to create a plurality of fixed "ones" and "zeroes" which make up the laser-scribed encryption key.

8. The method as claimed in claim 1 wherein the laser-scribed encryption key is generated burning one-time programmable fuses on a semiconductor die during fabrication of the secure memory to create a plurality of fixed "ones" and "zeroes" which make up the laser-scribed encryption key.

9. The method as claimed in claim 1 wherein the secure memory includes blocking gates coupled between the laser-scribed encryption key and encryption logic circuitry, the blocking gates being comprised of logic gates and have a blocking control signal input preventing access to the laser-scribed encryption key by the encryption logic circuitry.

10. The method as claimed in claim 1 wherein the laser-scribed encryption key is unique for each secure memory of a plurality of secure memories of different processing systems.

11. The method as claimed in claim 1 wherein the laser-scribed encryption key is randomly generated for each secure memory of a plurality of secure memories of different processing systems.

12. A method for transferring sensitive data over a non-secure communication channel using a secure communication device, the secure communication device including a host processor, a secure memory that including a laser-scribed encryption key, and a non-secure memory for storing the sensitive data in encrypted form, wherein sensitive data is encrypted within the secure memory using the laser-scribed encryption key and stored as encrypted data in the non-secure memory, the method comprising the steps of:

retrieving the encrypted sensitive data and an encrypted secret key from the non-secure memory;

decrypting, in the secure memory, the encrypted sensitive data and the secret key with the laser-scribed encryption key;

encrypting the decrypted sensitive data with a session encryption key related to the secret key; and

transferring the sensitive data encrypted with the session encryption key over the non-secure communication channel to a destination.

13. The method as claimed in claim 12 further comprising the steps of:

receiving biometric information from a user;

decrypting stored biometric information for the user with the laser-scribed encryption key;

wherein the step of transferring the encrypted sensitive data step is performed when the decrypted biometric information compares with the biometric information received from the user.

14. The method as claimed in claim 12 wherein the host processor and secure memory are fabricated on an integrated circuit chip, and the encrypted data is stored in a non-volatile memory.

15. The method as claimed in claim 12 wherein the laser-scribed encryption key is generated by laser-scribing a semiconductor die during fabrication of the secure memory to create a plurality of fixed "ones" and "zeroes" which make up the laser-scribed encryption key.

16. The method as claimed in claim 12 wherein the laser-scribed encryption key is generated by burning one-time programmable fuses on a semiconductor die during fabrication of the secure memory to create a plurality of fixed "ones" and "zeroes" which make up the laser-scribed encryption key.

17. The method as claimed in claim 12 wherein the secure memory includes blocking gates coupled between the laser-scribed encryption key and encryption logic circuitry, the blocking gates being comprised of logic gates and have a blocking control signal input preventing access to the laser-scribed encryption key by the encryption logic circuitry.

18. The method as claimed in claim 12 wherein the laser-scribed encryption key is randomly generated for each secure memory of a plurality of secure memories of different processing systems.

19. The method as claimed in claim 12 wherein the laser-scribed encryption key is unique for each secure memory of a plurality of secure memories of different processing systems.